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IMAGERY
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DIVISION

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PHOTOGRAPHIC INTELLIGENCE REPORT

~~TOP SECRET~~
~~VITAL REPORTS~~

SHENYANG ARSENALS/ARMAMENTS PLANTS
SHENYANG, CHINA

GROUP 1
Excluded from automatic
downgrading and declassification

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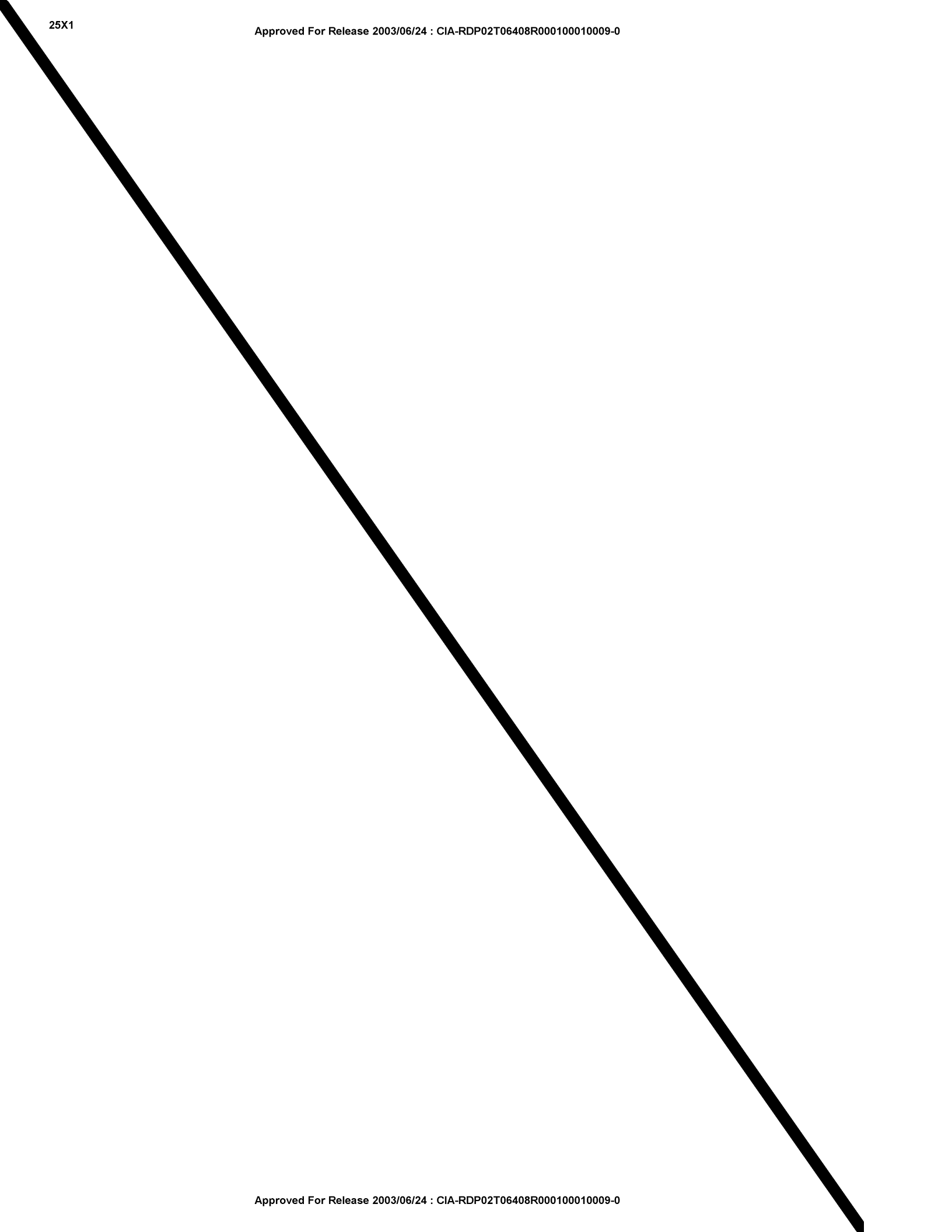
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DATE September 1965

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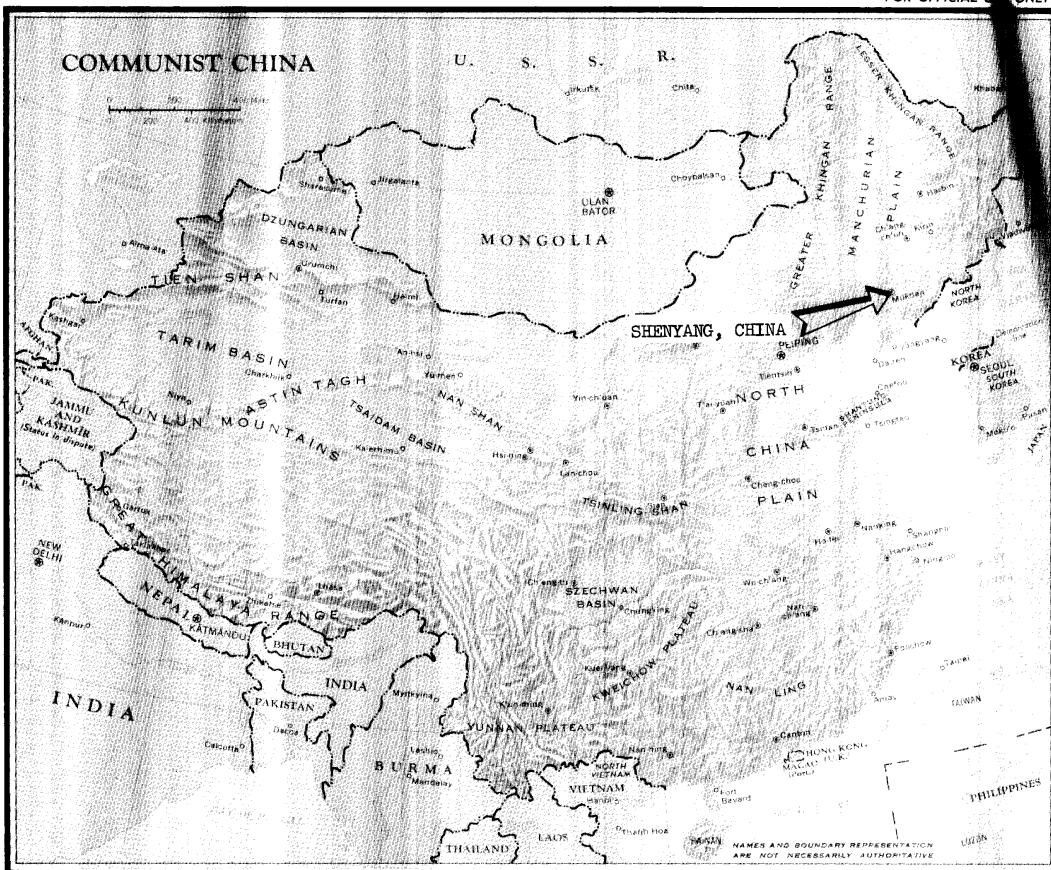
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FIGURE 1

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SHENYANG ARSENALS/ARMAMENTS PLANTS, CHINA

Shenyang (Mukden), a major industrial center in Southern Manchuria, located at geographic coordinates 41 48N - 123 27E, is one of the most prominent armaments and munitions manufacturing centers in China. Four plants: Shenyang Arsenal 90th, Wen-kuan-tun Subarsenal 90th, Shenyang Ammunition Plant, and an unidentified shell loading plant are reportedly engaged in significant production of this type. On Figure 2, each of these installations is outlined and identified.

Descriptions of functional areas or other features in the following discussion of each installation are keyed to numbers on the corresponding figure for each plant.

Shenyang Arsenal 90th

This installation, probably the largest plant in the Shenyang Complex, is located in the eastern outskirts of the city at approximate geographic coordinates 41 48N - 123 29E. The arsenal occupies an irregularly shaped area of approximately 300 acres.

A major armaments/munitions producer under the Chinese Nationalists and Japanese, it is reported to have been similarly utilized by the Communists.

Generally, buildings at this plant site are characteristic of types encountered in light fabrication. Item numbers in the following section are keyed to the outlined buildings or areas on Figure 3.

- (1) Administration area, two large administrative type structures and several small support and service buildings
- (2) Machine shop area, thirteen sawtooth or monitor roofed shop type buildings, several small probable storehouses, and one large irregularly shaped unidentified building
- (3) Multi-purpose rail served area, containing warehouses, open storage, a boiler house, several shop buildings

Features of special interest are annotated with letters and described below:

- (a) Former thermal power plant, converted to engine test building
- (b) Separately secured area containing small unidentified building and a storage tank

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- (4) Fuel storage, blending and control station; served by a rail tank car unloading rack
- (5) Engine test building, contains ten test cells
- (6) Warehousing/shop area with open coal storage and small administration buildings by main gate - on several missions large unidentified objects [redacted] were observed in open storage or on flat cars
- (7) Possible test building, rail served and fenced
- (8) Power substation, separately fenced
- (9) Thermal power plant with coal preparation and storage facilities
- (10) Metals processing section, large workshop, foundry, furnace building, and open storage
- (11) Main plant production area, several large fabrication/assembly buildings, many smaller workshops/machine shops, one boiler house, one possible forge, warehouses, and small support buildings

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Level of Activity

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Between [redacted] much of the arsenal was entirely rebuilt. The only significant features remaining basically unchanged were the machine shop area (item 2) and the metals processing area (item 10). By 1956, the plant layout appeared quite similar to that of [redacted]

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Between [redacted] and [redacted] major changes consisted of one large fabrication/assembly building (item 11a), engine test building (item 5), conversion of power plant into engine test facility (item 3a), completion of construction on the probable POL unloading and storage area (item 4), a large shop building (item 11c), and a new shop in place of a previously existing one (item 2a).

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Between [redacted] there were no major additions in the production areas. Construction in progress in [redacted] on the two north cells of the engine test building (item 5), a small probable shop (item 11b), and probable coal handling facilities near the power plant (item 9) has been completed. No major new construction has been started at this installation since coverage of [redacted]

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At least a portion of this arsenal has been active on the dates of all good quality photographic coverage, as indicated by the presence of smoke or steam, or a spray pond in operation. Using steam and smoke as the sole indicator of production, this plant was most active in [redacted]. However, the greater likelihood of fumes being visible in winter could account for this fact. Open stores of material, although generally small have been fairly consistent. In light fabrication industries, most storage would probably be under cover. Stockpiled coal

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has generally increased since [] coverage, mostly in the area of the power plant. Approximately nine rail cars were present in [] with fewer noted on other coverage. Very few vehicles have been apparent on plant roads at any time. Rather elongated unidentified objects have been noted on flat cars or adjacent to the rail siding in the warehouse and shop area (item 6) on coverage from several missions. In summary, the entire plant is operable and productive activity has probably been in the low to moderate range from []

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Summary

The exact identification of products from plants which fall into the general category of fabrication industries is difficult to determine. The presence of heating and processing equipment in association with large fabrication and assembly buildings establishes the production and probable assembly of metal parts. The engine test cells erected within the past few years indicate that this plant is interrelated with the adjacent Shenyang Aircraft Engine Plant #410 (Figure 2). Whether this plant is still engaged in the production of armaments cannot presently be proven on the basis of photography, although the facilities are suitable for this type of production. Plant layout and types of buildings do not indicate that any portion of this plant is now engaged in explosives production or loading.

Shell Loading Plant

This small unidentified plant lies near Shenyang Arsenal 90th, immediately NE of Shenyang Aircraft Engine Plant #410, at approximate geographic coordinates 41 48N - 123 31E.

The fenced plant area is irregular in shape with maximum dimensions of approximately 2,400 feet by 900 feet, oriented NW-SE. The buildings present in this installation are small revetted processing and storage structures plus non-protected support facilities. The following descriptions are keyed to Figure 6.

- (1) Explosives storage area, seven revetted buildings
- (2) Explosives processing area, possibly for simple bursting charge loading operation, three revetted buildings, two of which are interconnected, plus two small service buildings
- (3) Support facilities, warehouses for inert storage, one large shop, administration building, several smaller probable shops and service buildings, and coal storage
- (4) Support area, several warehouse and shop buildings, boiler house,

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- two small unidentified interconnected buildings (item 4a) of which one section is multistoried, and a lattice tower adjacent to these buildings
- (5) Probable initiator loading, group of small heavily revetted interconnected buildings
 - (6) Probable loading line for other components (fuzes, primers, etc.), includes probable pelleting building, assembly building, storage magazines, and non-revetted probable storage and service buildings.
 - (7) Boiler house
 - (8) Loading line, possibly for small caliber ammunition
 - (9) Ballistic test range area, with 300 meter covered range, several small service buildings, two revetted magazines
 - (10) Possible distruction point for faulty munitions

Level of Activity

Changes in the facilities at this plant have been only slight to moderate over a period of many years. Between [] several small probable processing buildings were added in the initiator area (item 5), a boiler house was built in a support area (item 4), an administration building was added (item 3), additions and changes to two probable storage buildings (item 8) converted this area into a probable loading line, and a new probable processing building was erected in a previously existing revettment, (item 2). Between [] the covered test range was constructed (item 9), a large shop building was erected (item 4), and a portion of the unidentified installation in area 4 (item 4a) was built. Since [] the only changes have occurred in area 4. The large shop building constructed between [] has been replaced by a much smaller structure and further additions have been made in the NE corner of this area (item 4a).

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Good quality coverage over this plant is available from several missions since []. Indications of productive activity have been scarce, especially on missions of []. The plant is not rail served and no vehicles have been apparent on any of the missions. The well maintained appearance of the plant area and occasional construction effort indicates that the plant has probably been operating throughout this period, although possibly at a low level. Smoke coming from stacks of one boiler house in [] and increased coal stockpiles on this same mission and in [] suggests that the plant has become somewhat more active in recent months.

A small nearby shell loading plant is also outlined on Figure 6, but is not discussed in this report.

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Summary

This plant is interpreted as an explosives loading installation. Examination of early photography suggests that its original function was the production of bursting charges, such as mines, grenades, etc. The addition of a ballistics test range and a less heavily protected loading or assembly line, suggests the addition of a propellants loading operations, possibly for small caliber ammunition.

There is no evidence that explosives are manufactured at this plant.

Wen-kuan-tun Subarsenal 90th

This large installation is located in the NE outskirts of Shenyang at the approximate geographic coordinates of 41 52N - 123 29E. It occupies an irregularly shaped fenced area of approximately 980 acres. Workers living quarters lie to the west and south of the arsenal.

The plant can be divided into two major sections on the basis of function. North of the rail spur entering the west side of the plant many structures are revetted or otherwise protected as is typical in explosives processing and loading; to the south are many shop/assembly buildings, typical of metal fabrication industries. The following descriptions of separate functional areas are keyed to Figure 7.

- (1) Administration area, with one large building, several small service and security sheds, and a boiler house
- (2) Motor pool, one probable shop, two probable warehouses, and vehicles present on several missions
- (3) Area of miscellaneous activity, containing small shops, boiler house, warehouse, and unidentified open storage
- (4) Administration area, also includes two small shops and a boiler house
- (5) Open area except for small sawmill in northeast corner, logs stockpiled along rail spur and open lumber storage west and south of sawmill
- (6) Possible POL receiving point, two storage tanks, rail served receiving point, boiler house nearby
- (7) Metal processing and fabrication area, large furnace/foundry section, three large probable machine shops, several workshops, and a boilerhouse
- (8) Probable metal processing and casting area, with furnace building, probable forge/foundry area, shops, and a boiler house
- (9) Fabrication section, several large machine shops, numerous small workshop/machine shops, three boiler houses, warehouses, one possible foundry, and probable assembly buildings

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- (10) Shipping/receiving section for plant, rail served, includes warehouses, large coal stockpile, and unidentified open storage
- (11) Unidentified processing area, large storage/shop building, boiler house, unidentified group of interconnected processing buildings, and probable warehouses
- (12) Secured explosives loading line, probable booster loading and possibly fuzes, series of buildings connected by passageways, two sections have visible blast walls, adjacent revetted storage, and miscellaneous inert storage and support buildings
- (13) Explosives storage area, ten revetted storage magazines, one revetted possible explosives processing building, a boiler house and one unidentified building
- (14) Explosives processing area, unidentified as to type
- (15) Initiator area, probable production of lead azide from sodium azide, includes precipitation buildings, processing buildings, and storage; probable pelleting building indicates initiator loading
- (16) Loading line, five buildings connected by passageways with numerous nearby support and service sheds; light protection indicates a fairly safe operation such as possible final assembly of various shell components; southeast of the loading line is an unidentified separately secured area containing a tall building and two large rectangular mounded areas

Level of Activity

The basic layout of this plant and many of the buildings remain unchanged since first coverage in [REDACTED]. The only significant changes in plant production areas between [REDACTED] were in the explosives loading and processing sector. Probable booster loading line (item 12) was completely rebuilt, although evidently incorporating portions of a previously existing line. Explosives processing area (item 14), was erected at the site of previous explosives storage. A loading line (item 16) was constructed and this project also utilized a previously existing building at this site. No extensive changes were noted in the production areas of the metal working and fabrication sections of this arsenal. However, the small sawmill (item 5) was added, several buildings were erected in the administration area (item 4), and of course there were a few changes in warehouses and open storage sites. The southwestern portion of this plant was also covered in [REDACTED]. A majority of the above noted changes in production sections had already occurred by this date. Comparison of [REDACTED] coverage with satellite photography of [REDACTED] reveals that plant facilities have remained at a nearly static level. Construction has started on a new warehouse (item 10), replacing five small sheds, since [REDACTED] a new probable warehouse and two unidentified buildings are presently under construction (item 9), and a

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probable POL storage tank under construction in [] has been completed (item 6).

There has been some indication of productive activity on all usable photographic coverage over this arsenal. Stockpiles of coal and other open storage have remained fairly constant since [] Smoke or steam has been visible in all the various plant sections at one time or another, indicating the entire plant is operable. The rail car count of sixteen on photography of [] is approximately twice the number noted on any other mission. Considerable amounts of smoke and steam were visible on both of the [] missions and in [] Very little indication of productive activity, other than the generally constant amount of open storage, could be noted on coverage of [] Very little smoke or steam is visible on either satellite mission of this year, but the quality is not quite as good as the [] photography, so the level of activity is somewhat more difficult to ascertain. No vehicles other than trucks can be definitely identified in the plant area. These have generally been located in the motor pool or near the main coal pile. Two unidentified moving objects were noted adjacent to the area annotated 8 (Figure 7) on photography from [] The approximate size of these objects was [] and they were moving at a rate of slightly more than [] feet/second.

Summary

The north portion of Wen-kuan-tun Arsenal is an explosives processing and loading section. Facilities for the final steps in the manufacture of initiator as well as initiator loading operations are probably present. At least two other separate loading lines and an additional explosives processing area are present. No associated ballistic test facilities were noted.

The south portion of this arsenal has the general appearance of metal fabrication industries. Facilities present range from possible refining of metals, through casting, machining, and probable assembly of parts. No good indicators of the exact type of products are present. It is probable that a portion of the facilities are utilized in the manufacture of metal components for ammunition. Beyond this suggestion, almost anything in the range of light to medium metal fabrication is possible.

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Shenyang Ammunition Plant

This installation is situated south and east from the city, across the Hun Ho River, at the approximate geographic coordinates of 41 44N - 123 29E. Reportedly, this plant produces 7.62 mm ammunition.

Most buildings at this location are warehouses, small shops, administrative, or barracks. Heavily protected and revetted structures normally present in explosive handling are not noted, except for three old deteriorated revettments, one housing a small building. The general area of this reported ammunition loading plant is enclosed by dashed lines on Figure 11. There does not appear to be a continuous fence around this installation, although several sections are secured. Descriptions are keyed to Figure 11.

- (1) Administration/support area, including a hospital, probable boiler house, park area, and miscellaneous buildings
- (2) Probable warehouse area, possibly includes unidentified processing
- (3) Three apparently abandoned revettments, one earth mounded structure, and one small probable storage building
- (4) Storage area
- (5) Area of unidentified function, includes administration building, warehouses, probable boiler house, and possible processing building
- (6) Fenced storage area, several warehouses open storage, and small probable boiler house
- (7) Motor pool, with shops, warehouses, and numerous vehicles noted on all good quality photographic coverage since 1956
- (8) Large supply depot, with numerous warehouses and much open storage extending for a considerable distance to the west

Level of Activity

Since [] the only major changes have been, additional storage buildings (item 4), and the construction of most of the buildings in the motor pool area (item 7). The supply depot adjacent to the west of this installation is entirely new since [] with most construction prior to []

This area has shown signs of activity on all photographic coverage. However, little actual production appears to be occurring. Some processing and handling of various materials prior to shipment or storage may take place within the outlined area. Equipment which could be identified included trucks, in the motor pool and adjacent supply depot, and cranes in the supply depot. A large number of rail cars have generally been noted in the depot. Large open storage areas are present in the depot. However, it has not been possible to make reliable identification of this material,

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especially since much of it is covered or crated.

Summary

The main function of this installation is apparently administration and support for the large supply depot which lies generally west of the outlined area. However, many buildings within the plant area itself are also for storage. Although this is definitely not the site of a major loading operation, it is possible that small caliber ammunition could be produced in the area of dispersed buildings (item 2). Because of the nature of such an operation, obvious indicators of explosives handling might not be present. The general layout of the area suggest that it may be military in nature, although no conclusive proof of this hypothesis is apparent.

All measurements have been made by the CIA/IAD/IB project analyst. They should be considered as approximate and must not be taken as official NPIC mensuration data compiled by the Technical Intelligence Division, NPIC.

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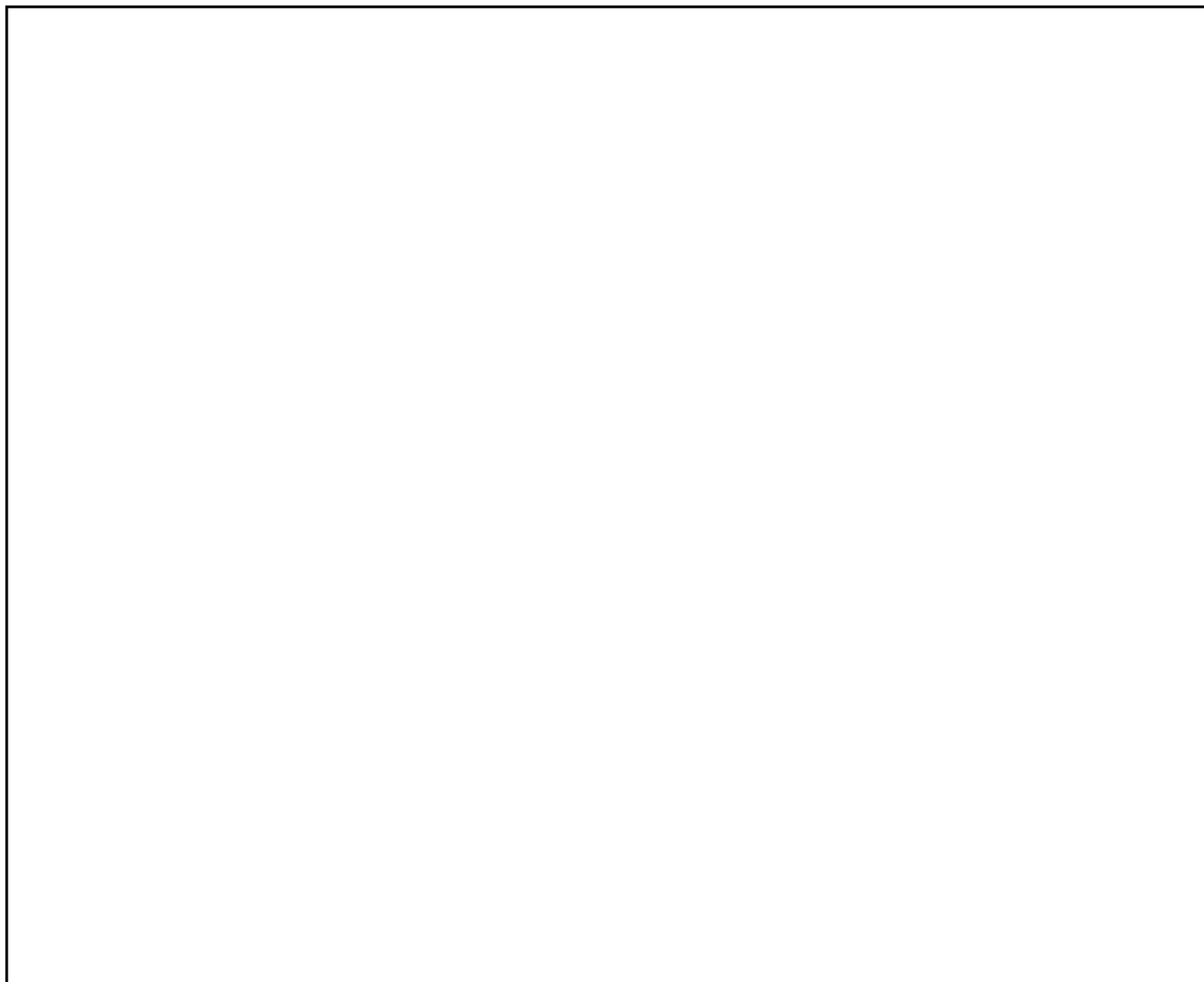
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MAPS OR CHARTS

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3. CIA/PID/IB Memo 349/63, Shen-Yang Arsenal Complex
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REQUIREMENT

CIA. C-RR5-82,633

CIA/IAD PROJECT

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FIGURE 2

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FIGURE 3

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SHENYANG ARSENAL 90th
SHENYANG, CHINA
41 48N - 123 29E

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FIGURE 4



SHENYANG ARSENAL 90th
SHENYANG, CHINA
41 48N - 123 29E

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FIGURE 5

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SHENYANG ARSENAL 90th
SHENYANG, CHINA
41 48N - 123 30E

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FIGURE 6

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SHELL LOADING PLANT
SHENYANG, CHINA
41 48N - 123 31E

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FIGURE 7

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WEN-KUAN-TUN SUBARSENAL
SHENYANG, CHINA
41 52N - 123 30E

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FIGURE 8

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WEN-KUAN-TUN SUBARSENAL
SHENYANG, CHINA
41 52N - 123 30E

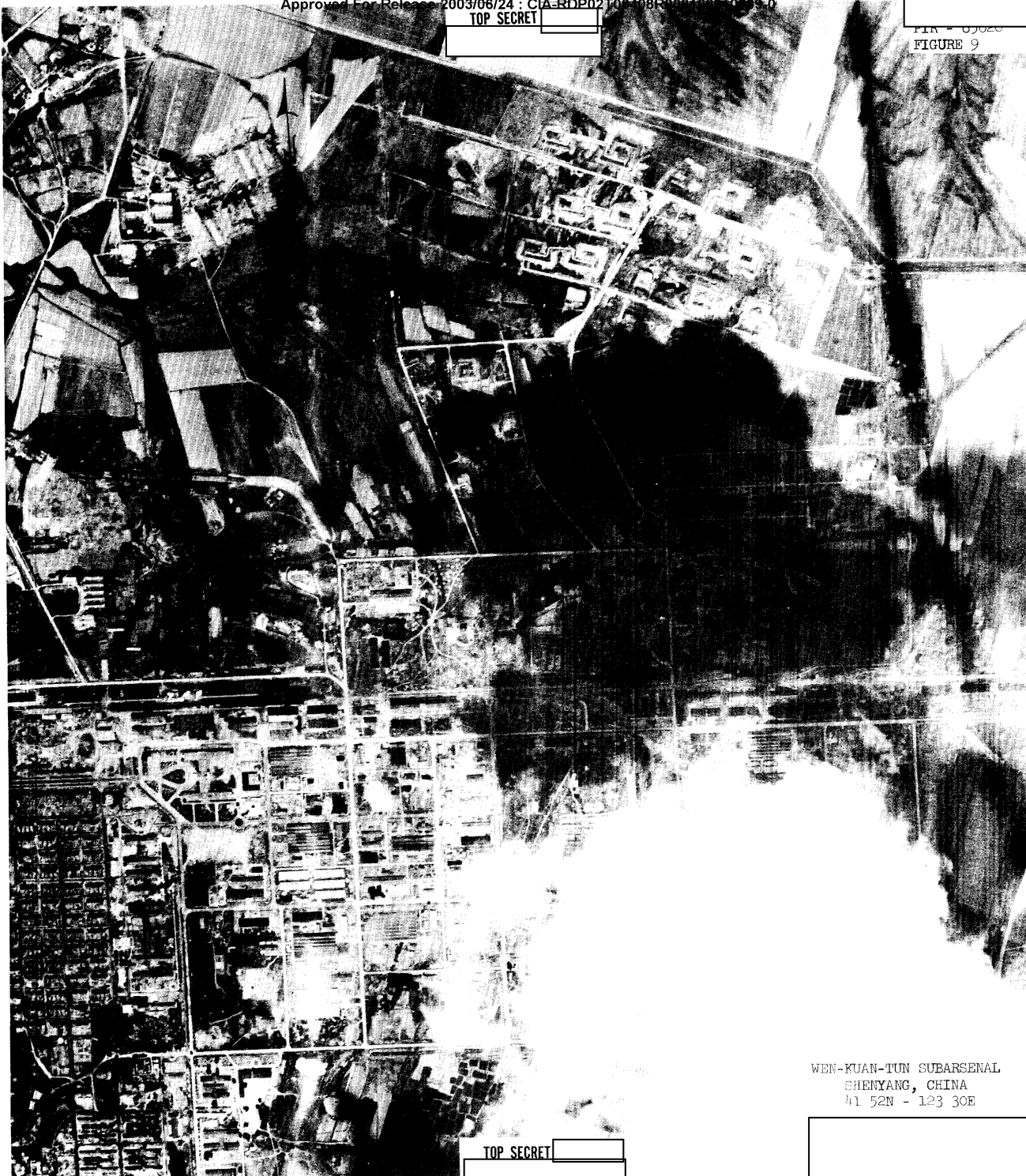
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FIGURE 9

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WEN-KUAN-TUN SUBARSENAL
SHENYANG, CHINA
41 52N - 123 30E

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FIGURE 10

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SHENYANG AMMUNITION PLANT
SHENYANG, CHINA
41 44N - 123 29E

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FIGURE 11

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SHENYANG AMMUNITION PLANT
SHENYANG, CHINA
41 44N - 123 29E

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